

Application No. 09/833,391
Reply to Office Action dated June 16, 2004

REMARKS

Claims 1, 2, 4-8, and 10-24 are presented for further examination. Claims 1, 7, 14, and 18 have been amended.

In the final Office Action mailed June 16, 2004, the Examiner rejected claims 1, 2, 4-8, and 10-24 under 35 U.S.C. § 103(a) as unpatentable over U.S. Patent No. 6,107,910 ("Nysen").

Applicant respectfully disagrees with the basis for the rejection and requests reconsideration and withdrawal of the rejection.

Nysen, U.S. Patent No. 6,107,910 is directed to a dual mode transmitter/receiver and decoder for RF transponder tags. Moreover, Nysen teaches a very fast frequency change of between 5 and 25 MHz, which Nysen acknowledges is an extremely high rate. This rate is unsuitable for operation under FCC Part 15, which limits bandwidth of the reader to channel bandwidths of 400 KHz. Nysen is particularly directed to solving problems caused by artifacts of his high-speed frequency hopping, when he states: "During frequency hop transitions, it is likely that the demodulator will generate artifacts, which may be identified and/or corrected by appropriate processing according to the present invention." See Nysen, column 37, lines 46-49.

Applicant notes that Nysen discloses in Figures 3A-3B a frequency ramping scheme that is technically not frequency hopping. Nysen teaches a direct sequence spread spectrum (DSSS) embodiment in Figures 31-38, as discussed at column 31-column 35, line 36. Applicant notes that DSSS requires a DSSS signal for correlation, and the high-speed chipping signal in a DSSS system that is correlated with itself and generally only a few symbols long is defined by Nysen at column 32, line 17, where Nysen teaches a 10 MHz chipping rate. This is not true frequency hopping. The chipping rate is not a frequency hopping rate in the sense of the present invention, which is compliant with FCC Part 15 (see specification, page 4, lines 11-21). Rather, the very fast symbol modulation Nysen describes in column 1, lines 60-65, requires correlation back at the reader and hence is not a true frequency hopper.

Nysen refers at column 11, line 37, to Figure 21 as the approach he is recommending. As shown in Figure 21, the frequency spectrum does not completely cover the band of 902 to 928 MHz is shown. One of the fundamental requirements of Part 15 regulations

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is complete coverages of all frequencies within the band in an equal manner. Figures 3A and 3B speak to a frequency range of 905 MHz to 925 MHz, which is incomplete coverage. Nysen also teaches at column 13, line 67 and again at column 14, line 46, frequency ramps or hops between portions of the ISM band, which again is not legal and compliant with Part 15.

Again, Part 15 requires full usage and disallows very fast hops as they create out-of-band usage. While the uniformly spaced steps in frequency described in Nysen at column 15, line 1, is appropriate for SAW devices, it is specifically not compliant with Part 15.247. Moreover, Figure 19 discloses radiating at 305 MHz and receiving at 915 MHz. While this is clever and useful for some systems, both CMOS and SAW, it is specifically not compliant with Part 15.

Nysen uses a very fast hopping to create a problem for CMOS tags that his invention solves. In several portions of Nysen, he refers to a "signal phase change detector." It is important to Nysen that he track changes in phase. The present invention has no similar need. For example, Nysen teaches at column 10, line 53, that a further object of the invention is a "phase change detector." In contrast, the present invention utilizes invertible data and as such does not require a phase change detector.


Independent claims 1, 7, 14, and 18 have been amended to be directed to an FCC Part 15 compliant interrogator, method, device, and system, respectively. Moreover, each of these claims requires generation of radio frequency signals at pseudo-randomly selected frequencies within a frequency band of 902 to 928 MHz or 2.45 GHz to 5.8 GHz. As discussed above, nowhere does Nysen teach or suggest compliance with Part 15 and in particular operation within the range of 902 MHz to 925 MHz or 2.4 GHz to 5.8 GHz as required by Part 15.

In view of the foregoing, applicant respectfully submits that claims 1, 7, 14, and 18, as well as all claims depending therefrom, are clearly allowable over Nysen. In the event the Examiner disagrees or finds minor informalities that can be resolved by telephone conference, the Examiner is urged to contact applicant's undersigned representative by telephone at (206) 622-4900 in order to expeditiously resolve prosecution of this application. Consequently, early and favorable action allowing these claims and passing this case to issuance is respectfully solicited.

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The Director is authorized to charge any additional fees due by way of this Amendment, or credit any overpayment, to our Deposit Account No. 19-1090.

Respectfully submitted,
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